

## PATENT ABSTRACTS OF JAPAN

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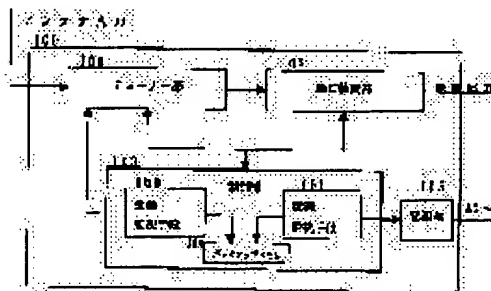
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## (54) PROGRAM RESERVATION VIDEO RECORDING APPARATUS

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a program reservation video recording apparatus that retrieves a rebroadcast program from an EPG, automatically sets video recording reservation and obtains a best video recording result.

SOLUTION: The apparatus comprises a device 100 receiving and video-recording a broadcast including an EPG that is provided with a reception monitor means 150 and a power supply monitor means 151. On the occurrence of a disturbed image or a low reception level disabling display of an image through the monitor of a reception level of a tuner during video recording of a reserved program or when part or all of a program cannot be recorded due to a power failure or the like, apparatus retrieves a rebroadcast of the same program from the EPG. When the rebroadcast program is in existence, the system automatically reserves the rebroadcast data and time for video recording. Furthermore, in the case that a random access video recorder is adopted for a video recording section 102, the video recording state of first recording is compared with that of retaken recording and the video recording which is worse can be eliminated.



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CLAIMS

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[Claim(s)]

[Claim 1] The tuner section which receives the broadcast wave of the program to which the EPG data of an electronic program guide were added, and outputs an image, The image transcription equipment which records on videotape the image outputted from this tuner section, and the backup memory which memorizes the above-mentioned EPG data, Based on the above-mentioned EPG data memorized by this backup memory, supervise the receiving level of the above-mentioned broadcast wave, and a result is memorized to the above-mentioned backup memory. When abnormalities are in the above-mentioned receiving level by this monitor, it is based on the above-mentioned EPG data memorized by the above-mentioned backup memory. Program timed recording equipment characterized by consisting of listening-watch means to control the above-mentioned image transcription equipment to supervise the above-mentioned tuner section, and to detect re-broadcast of the above-mentioned program, and to record on videotape again.

[Claim 2] Program timed recording equipment according to claim 1 characterized by consisting of above-mentioned image transcription equipment which compares the image recorded by the above-mentioned image transcription equipment on videotape with the image which recorded re-broadcast of the above-mentioned program on videotape, and records the image of the direction with the above-mentioned sufficient receiving level on videotape.

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DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to program timed recording equipment, and relates to the program timed recording equipment which receives and records on videotape the broadcast to which electronic program guide data were added especially, and a receiving set and image transcription equipment combine, and is recorded on videotape.

[0002]

[Description of the Prior Art] During the image transcription of a program, the program timed recording equipment of the former (not shown) is bad, or the receive state of an electric wave When the time amount which reserved the image transcription has interruption to service, by the electronic program guide (Following EPG is called) which displays the program information which checked the content of an image transcription which the user reserved, and carried out image transcription reservation of the re-broadcast, and was sent from the broadcasting station on a television screen by list In the program reservation using information, such as a channel, a program name, start time, and end time, a mistake is able to be able to do only by choosing a program from the program list displayed on the screen, and for there to be no input of initiation time, end time, etc., and to reserve simply few.

[0003] Since CS digital broadcasting which added this EPG is suitable for multi-channel broadcast, Although the program of the same content may be broadcast several times on that day, it broadcasts repeatedly per a unit and one month for one week, and information, such as broadcast of eye what talk, is added to a program name, and reservation using EPG can be performed if it is one apparatus of a tuner and image transcription equipment Although a tuner needs to reserve by EPG and image transcription equipment needs to reserve independently assignment of start time, end time, and the connected terminal etc. when a tuner and image transcription equipment are separate The tuner which the remote control code of a videocassette recorder is generated tuner ] to reservation time amount, and interlocks reservation with it, The videocassette recorder carrying the input terminal which is interlocked with an outputting-to reservation time amount video signal, and starts an image transcription etc. is commercialized. Recently, not only the equipment recorded on videotape on a tape but the equipment which carries out digital recording to the hard disk drive in which random access is possible, DVD-RAM, etc. is developed.

[0004]

[Problem(s) to be Solved by the Invention] As mentioned above, for example, CS digital broadcasting etc. has a weak electric wave, and conventional program timed recording equipment is influenced of the weather. A screen is temporarily in disorder in a local deluge, a typhoon, snow, etc., and reception becomes impossible. Moreover, a user has to check the content of an image transcription and the image transcription reserved when it was that the electric current is cut off at reservation time amount must reserve re-broadcast, when it cannot perform. Moreover, when the user was making the house absence for several days and was not able to check the content of an image transcription, the technical problem that it bore by the image transcription result which was not able to be recorded on videotape normally occurred.

[0005] Then, the object of this invention searches re-broadcast of a program from EPG, sets it as image transcription reservation automatically, and is to offer the program timed recording equipment which obtains the best image transcription result.

[0006]

[Means for Solving the Problem] In order to solve an above-mentioned technical problem, the program timed recording equipment of this invention The tuner section which receives the broadcast wave of the program to which the EPG data of an electronic program guide were added, and outputs an image, The image transcription equipment which records on videotape the image outputted from this tuner section, and the backup memory which memorizes the above-mentioned EPG data, Based on the above-mentioned EPG data memorized by this backup memory, supervise the receiving level of the above-mentioned broadcast wave, and a result is memorized to the above-mentioned backup memory. When abnormalities are in the above-mentioned receiving level by this monitor, it is based on the above-mentioned EPG data memorized by the above-mentioned backup memory. It is characterized by consisting of listening-watch means to control the above-mentioned image transcription equipment to supervise the above-mentioned tuner section, and to detect re-broadcast of the above-mentioned program, and to record on videotape again.

[0007] Moreover, in order to solve an above-mentioned technical problem, the program timed recording equipment of this invention compares the image recorded by the above-mentioned image transcription equipment on videotape with the image which recorded re-broadcast of the above-mentioned program on videotape, and is characterized by consisting of above-mentioned image transcription equipment which records the image of the direction with the above-mentioned sufficient

receiving level on videotape.

[0008]

[Embodiment of the Invention] Next, the program image transcription reservation equipment by the gestalt of the 1st operation of this invention is explained with reference to a drawing.

[0009] Drawing 1 is the block diagram of the program image transcription reservation equipment by the gestalt of the 1st operation of this invention.

[0010] Drawing 2 is a flow chart which shows timed recording actuation of the program image transcription reservation equipment by the gestalt of the 1st operation of this invention.

[0011] Drawing 3 is a flow chart which shows actuation of the program image transcription reservation equipment by the gestalt of the 1st operation of this invention after a power fail recovery.

[0012] As the program image transcription reservation equipment by the gestalt of the 1st operation of this invention is shown in drawing 1, the receiving set 106 shows the case where timed recording is made in the external image transcription equipment 107 and the combination which consist of the tuner section 101, a control section 103, a backup memory 104, a power supply section 105, and the listening-watch means 150 for this invention and the power-source monitor means 151.

[0013] Next, actuation of the program image transcription reservation equipment by the gestalt of the 1st operation of this invention is explained with reference to a drawing.

[0014] Actuation of the program image transcription reservation equipment by the gestalt of the 1st operation of this invention As shown in drawing 1 and drawing 2, a user a program to make the timed recording of for retrieval of re-broadcast of the information on EPG at the time of reservation If the image transcription time amount which set as timed recording mode and was reserved comes when it memorizes to a backup memory 104 (step 201) and a user makes timed recording (step 202) Under supervising with a listening-watch means 150 by which a control section 103 supervises the receiving level of the tuner section 101 during timed recording, and supervising the receiving level used at the time of antenna accommodation of the tuner section 101 also during an image transcription Rapid level variation, the rapid condition that it is unreceivable at all, etc. are made to supervise (step 202).

[0015] Then, when a problem is in the receiving level currently supervised, the receiving level data of the generated time and receiving level are memorized to a backup memory 104 (step 203), and it judges whether this receiving level monitor had receiving level data of the receiving level under image transcription after timed recording termination and timed-recording termination (step 204) repeatedly during timed recording (step 205).

[0016] Since search re-broadcast from EPG, the same channel is searched (step 206), it searches using the identifier of a program, and the information on the content and it is displaying in eye \*\*\*\*\* depending on a program when there are a monitor result of this receiving level and a problem Since the program name in EPG may differ from the content somewhat also in the same program when also making the data applicable to a comparison and searching other channels, when a user makes it set up whether it searches or not and it is not found in EPG for less than one week, it is carried out to setting out made to continue and search.

[0017] Furthermore, it judges by whether EPG was searched (step 206) and there were any re-broadcast data (step 207). When there are corresponding data, broadcast time of the re-broadcast found from EPG is set as image transcription reservation (step 208). Although priority is given to setting out of a user and, as for the case of the equipment 100 of one apparatus, a control section 103 controls the tuner section 101 and the image transcription equipment section 102 when the found broadcast overlaps the image transcription reservation which PPV (pay-per-view: charged broadcast for every program) and a user have set up In the case of the equipment 106 of a discrete type, a control section 103 generates a remote control code, and it records on videotape to image transcription equipment 107, and re-broadcast is recorded on videotape by using the image transcription equipment 107 which is interlocked with a video output and starts an image transcription.

[0018] On the other hand, as shown in drawing 3, hold the content of reservation, and interruption-to-service time of day to a backup memory 104, and, as for actuation of the control section 103 in interruption to service, the power-source Monitoring Department 151 senses a power fail recovery. Carry out \*\*\*\*\* (step 301) of the content of reservation which the after [ a power fail recovery ] user has reserved, and it makes it judge whether current time of day has passed over the timed recording time amount which the user set up (step 302), and if current is among image transcription reservation time amount, an image transcription will be started (step 303) and receiving level will be supervised.

[0019] Therefore, compare the time amount which investigated whether there would be any time amount whose image transcription was not completed, and failed for power with the image transcription time amount which the user reserved (step 304), and when there is time amount which was not able to be recorded on videotape The interruption-to-service time data of the time which was not able to be recorded on videotape is memorized to a backup memory 104 (step 305). It makes it judge whether there were this interruption-to-service time data and receiving level data (step 306), and if EPG is searched like processing of steps 205-208 of drawing 2 and there is corresponding re-broadcast, it will be set as image transcription reservation (steps 306-309).

[0020] Next, the program image transcription reservation equipment by the gestalt of the 2nd operation of this invention is explained with reference to a drawing.

[0021] Drawing 4 is the block diagram of the program image transcription reservation equipment by the gestalt of the 2nd operation of this invention.

[0022] Drawing 5 is a flow chart which shows image transcription result comparison actuation of the program image transcription reservation equipment by the gestalt of the 2nd operation of this invention.

[0023] The program image transcription reservation equipment by the gestalt of the 2nd operation of this invention consists of the tuner section 101, the image transcription equipment section 102, a control section 103, a backup memory 104, a power supply section 105, and the listening-watch procedure 150 for this invention and the power-source monitor procedure 151, as shown in drawing 4.

[0024] Next, actuation of the program image transcription reservation equipment by the gestalt of the 2nd operation of this invention is explained with reference to a drawing.

[0025] Actuation of the program image transcription reservation equipment by the gestalt of the 2nd operation of this invention As shown in drawing 4 and drawing 5, the image transcription equipment section 102 with the equipment of one apparatus A hard disk. It is the object compares the data recorded on videotape before with the data restarted by re-broadcast the case of the possible equipment of random access, such as DVD-RAM, and deletes data with bad remnants for good data, and it is made not to reduce an image transcription field. Whether there are any data recorded on videotape after timed recording termination and to a front The EPG data in a backup memory 104, receiving level data and interruption-to-service time data being searched (step 501), and, when [ corresponding ] found The last image transcription record data are compared with these image transcription record data (step 502), and record of the receiving level condition currently supervised during an image transcription and record of the interruption-to-service time amount which was not able to be recorded on videotape by interruption to service compare.

[0026] Then, the comparison with the image transcription record data recorded on videotape last time and the image transcription record data recorded on videotape this time is performed (step 503). The image transcription data which have the last problem when there is no problem in the result recorded on videotape this time are deleted (step 504). Perform a comparison in case there are both problems (step 505), and when it can judge that a result is clearly inferior, image transcription data are deleted (step 506). For example, since a problem is solved by editing a doing [ it / clearly ]-like [ the image transcription result which was not able to be recorded on videotape by first portion part interruption to service, and the second half ] image transcription result which had abnormalities in electric-wave receiving level in part case, setting out which does not carry out deletion can also be chosen.

[0027]

[Effect of the Invention] Since the time and effort of the activity of reserving again in search of re-broadcast by oneself can be saved when a user checks the reserved image transcription result according to [ as explained above ] the program image transcription reservation equipment of this invention and there is a problem, when the house has been made absence by the travel, the business trip, etc. for a long time, it is effective in the ability to obtain a better image transcription result.

[0028] Moreover, since according to the program image transcription reservation equipment of this invention the image transcription situation of the data recorded first and the restarted data can be compared, it can leave the direction with a sufficient condition, the worse one can also be deleted and it can leave the image transcription of a good image transcription condition without increasing storage capacity, effectiveness is in equipment like the image server which performs are recording of a program, and preservation.

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TECHNICAL FIELD

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[Field of the Invention] This invention relates to program timed recording equipment, and relates to the program timed recording equipment which the equipment which receives and records on videotape the broadcast to which electronic program guide data were added especially, and a receiving set and image transcription equipment combine, and is recorded on videotape.

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PRIOR ART

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[Description of the Prior Art] The program timed recording equipment of the former (not shown) checks the content of an image transcription which the user reserved, when the receive state of an electric wave is bad during the image transcription of a program or the time amount which reserved the image transcription has interruption to service. A mistake is able to be able to do only by choosing a program from the program list displayed on the screen in the program reservation using information, such as a channel, a program name, start time, and end time, and for there to be no input of initiation time, end time, etc., and to reserve simply few by the electronic program guide (for Following EPG to be called) which displays the program information which carried out image transcription reservation of the re-broadcast, and was sent from the broadcasting station on a television screen by list.

[0003] Since CS digital broadcasting which added this EPG is suitable for multi-channel broadcast, Although the program of the same content may be broadcast several times on that day, it broadcasts repeatedly per a unit and one month for one week, and information, such as broadcast of eye what talk, is added to a program name, and reservation using EPG can be performed if it is one apparatus of a tuner and image transcription equipment Although a tuner needs to reserve by EPG and image transcription equipment needs to reserve independently assignment of start time, end time, and the connected terminal etc. when a tuner and image transcription equipment are separate The tuner which the remote control code of a videocassette recorder is generated tuner ] to reservation time amount, and interlocks reservation with it, The videocassette recorder carrying the input terminal which is interlocked with an outputting-to reservation time amount video signal, and starts an image transcription etc. is commercialized. Recently, not only the equipment recorded on videotape on a tape but the equipment which carries out digital recording to the hard disk drive in which random access is possible, DVD-RAM, etc. is developed.

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**EFFECT OF THE INVENTION**

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[Effect of the Invention] Since the time and effort of the activity of reserving again in search of re-broadcast by oneself can be saved when a user checks the reserved image transcription result according to [ as explained above ] the program image transcription reservation equipment of this invention and there is a problem, when the house has been made absence by the travel, the business trip, etc. for a long time, it is effective in the ability to obtain a better image transcription result.

[0028] Moreover, since according to the program image transcription reservation equipment of this invention the image transcription situation of the data recorded first and the restarted data can be compared, it can leave the direction with a sufficient condition, the worse one can also be deleted and it can leave the image transcription of a good image transcription condition without increasing storage capacity, effectiveness is in equipment like the image server which performs are recording of a program, and preservation.

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**TECHNICAL PROBLEM**

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[0005] Then, the object of this invention searches re-broadcast of a program from EPG, sets it as image transcription reservation automatically, and is to offer the program timed recording equipment which obtains the best image transcription result.

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DESCRIPTION OF DRAWINGS  
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[Brief Description of the Drawings]

[Drawing 1] It is the block block diagram of the program image transcription reservation equipment by the gestalt of the 1st operation of this invention.

[Drawing 2] It is the flow chart which shows timed recording actuation of the program image transcription reservation equipment by the gestalt of the 1st operation of this invention.

[Drawing 3] It is the flow chart which shows actuation of the program image transcription reservation equipment by the gestalt of the 1st operation of this invention after a power fail recovery.

[Drawing 4] It is the block block diagram of the program image transcription reservation equipment by the gestalt of the 2nd operation of this invention.

[Drawing 5] It is the flow chart which shows image transcription result comparison actuation of the program image transcription reservation equipment by the gestalt of the 2nd operation of this invention.

[Description of Notations]

100 One Apparatus Equipment Whole

101 Tuner Section

102 Image Transcription Equipment Section

103 Control Section

104 Memory

105 Power Supply Section

106 Discrete-Type Equipment Whole 2

107 Image Transcription Equipment

150 Listening-Watch Means

151 Power-Source Monitor Means

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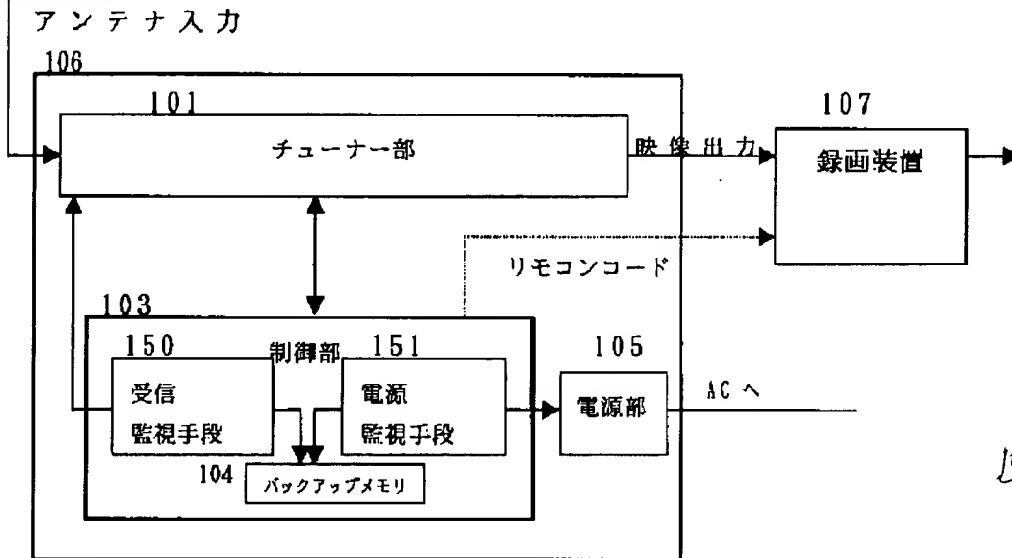
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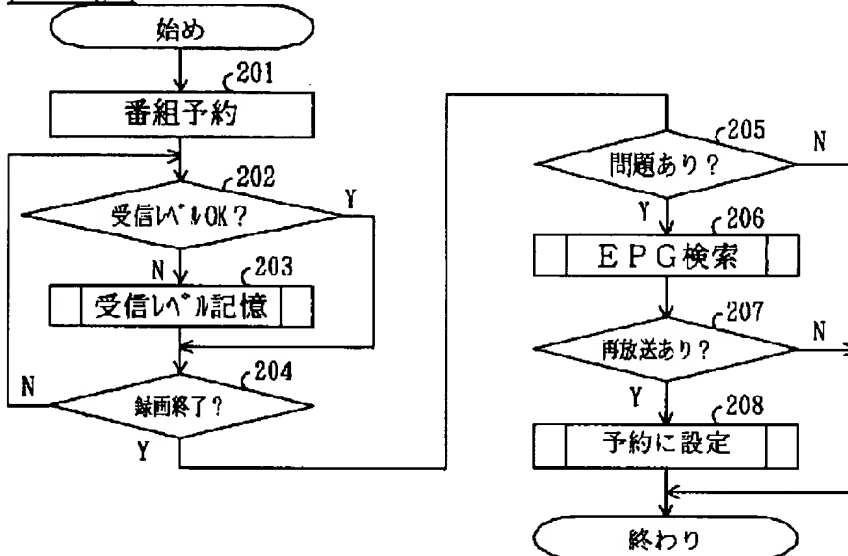
## DRAWINGS

[Drawing 1]

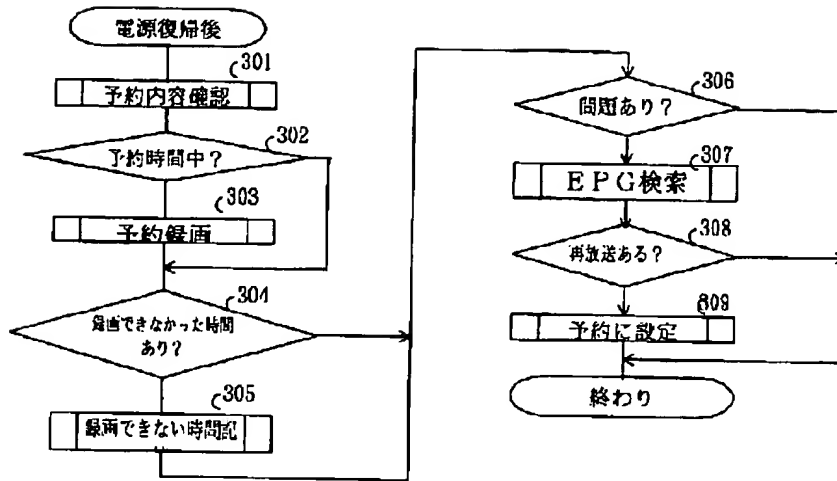


101: Tuner  
 103: Controller  
 104: backup memory  
 105: power control  
 150: reception watch  
 151: power source monitor

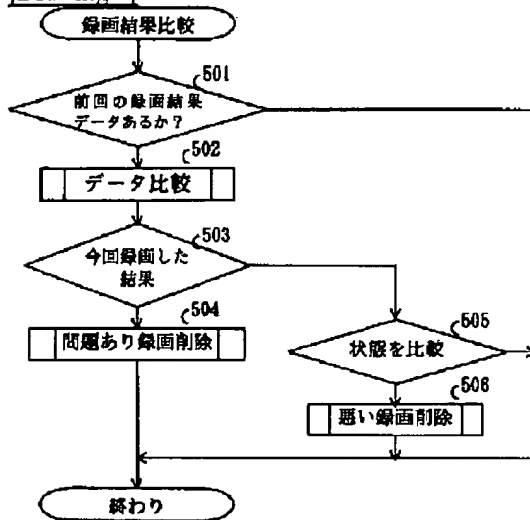
[Drawing 2]



[Drawing 3]



[Drawing 5]



[Drawing 4]

